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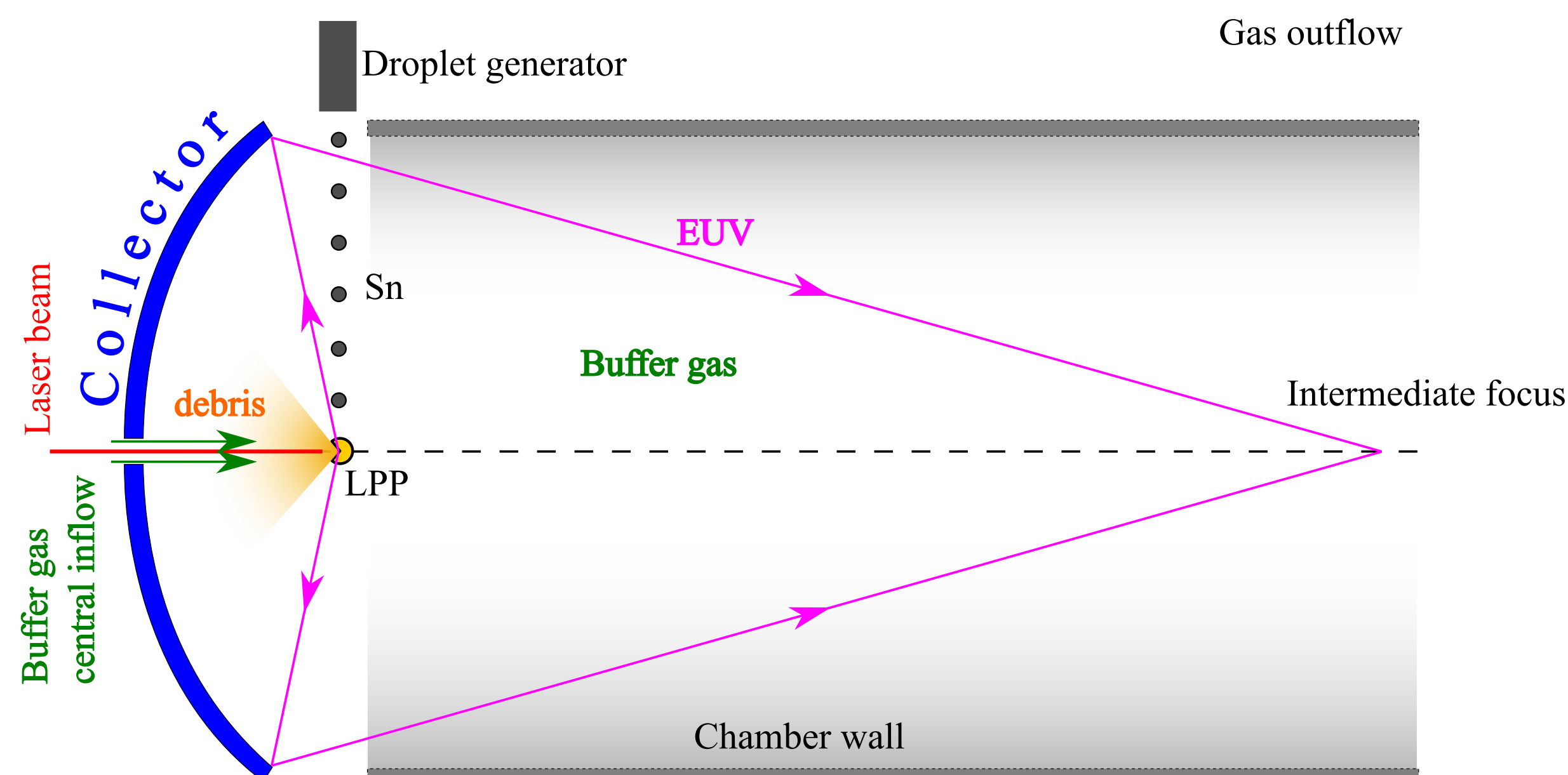
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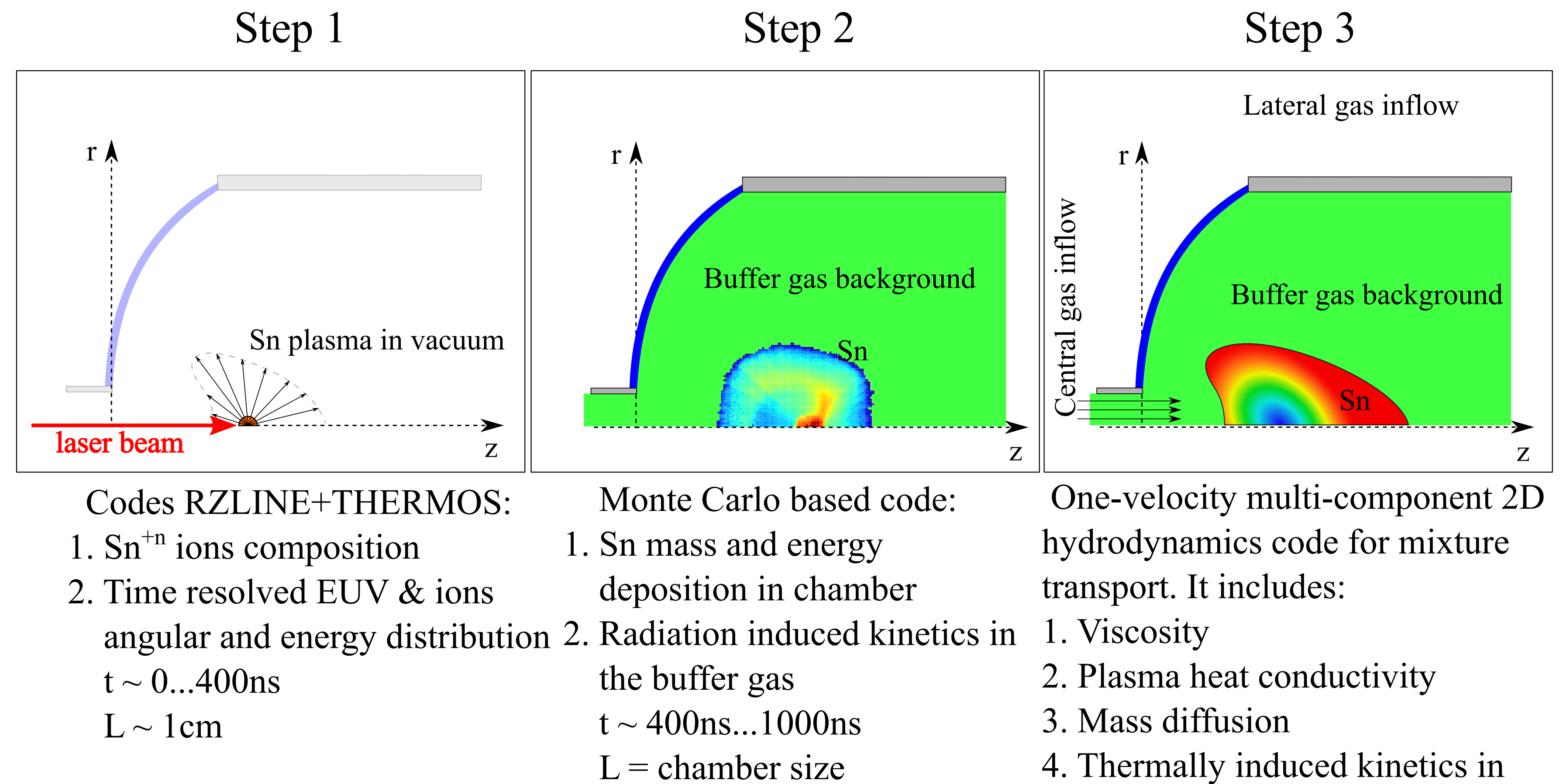
³ASML

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Principal scheme

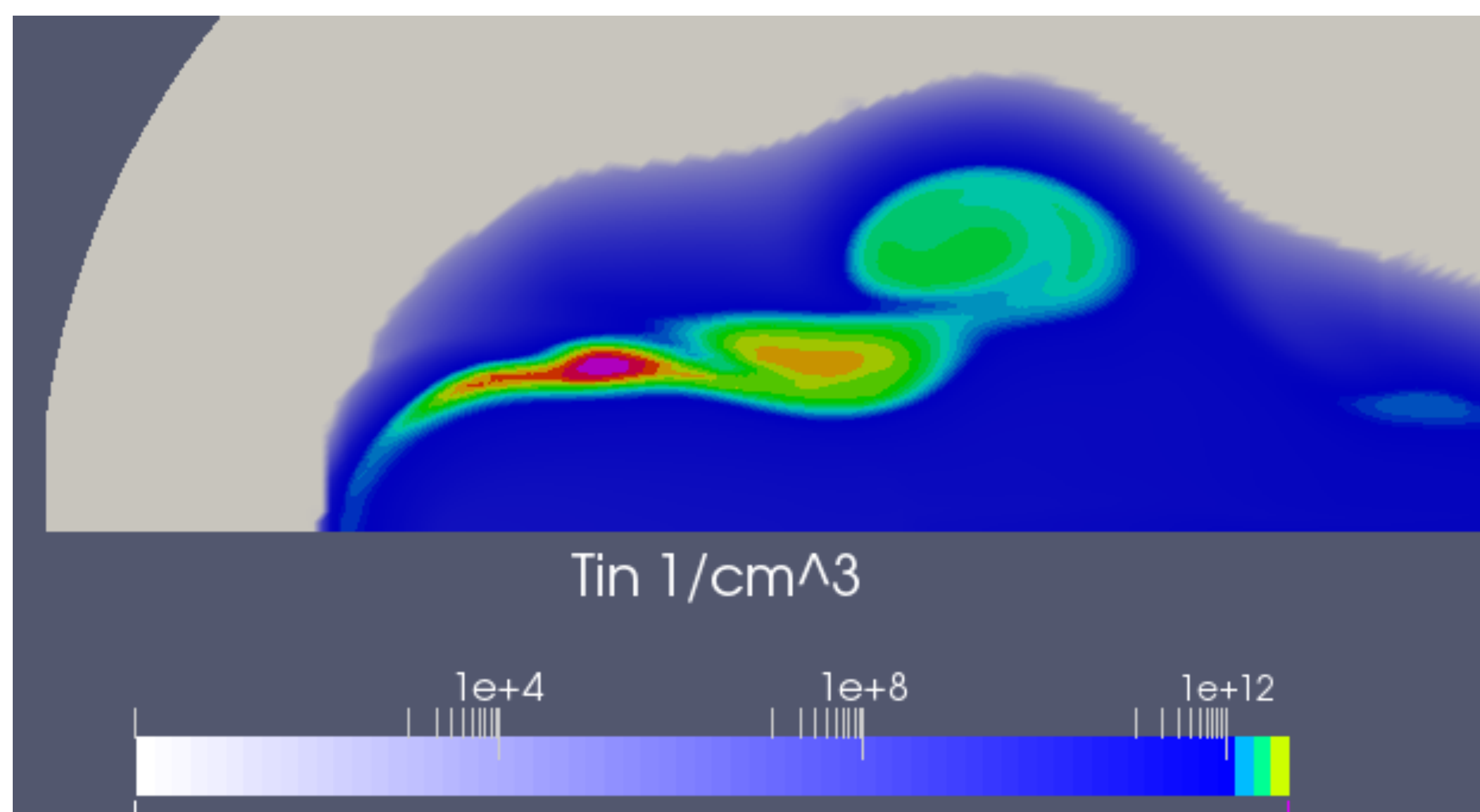


Steps of modeling

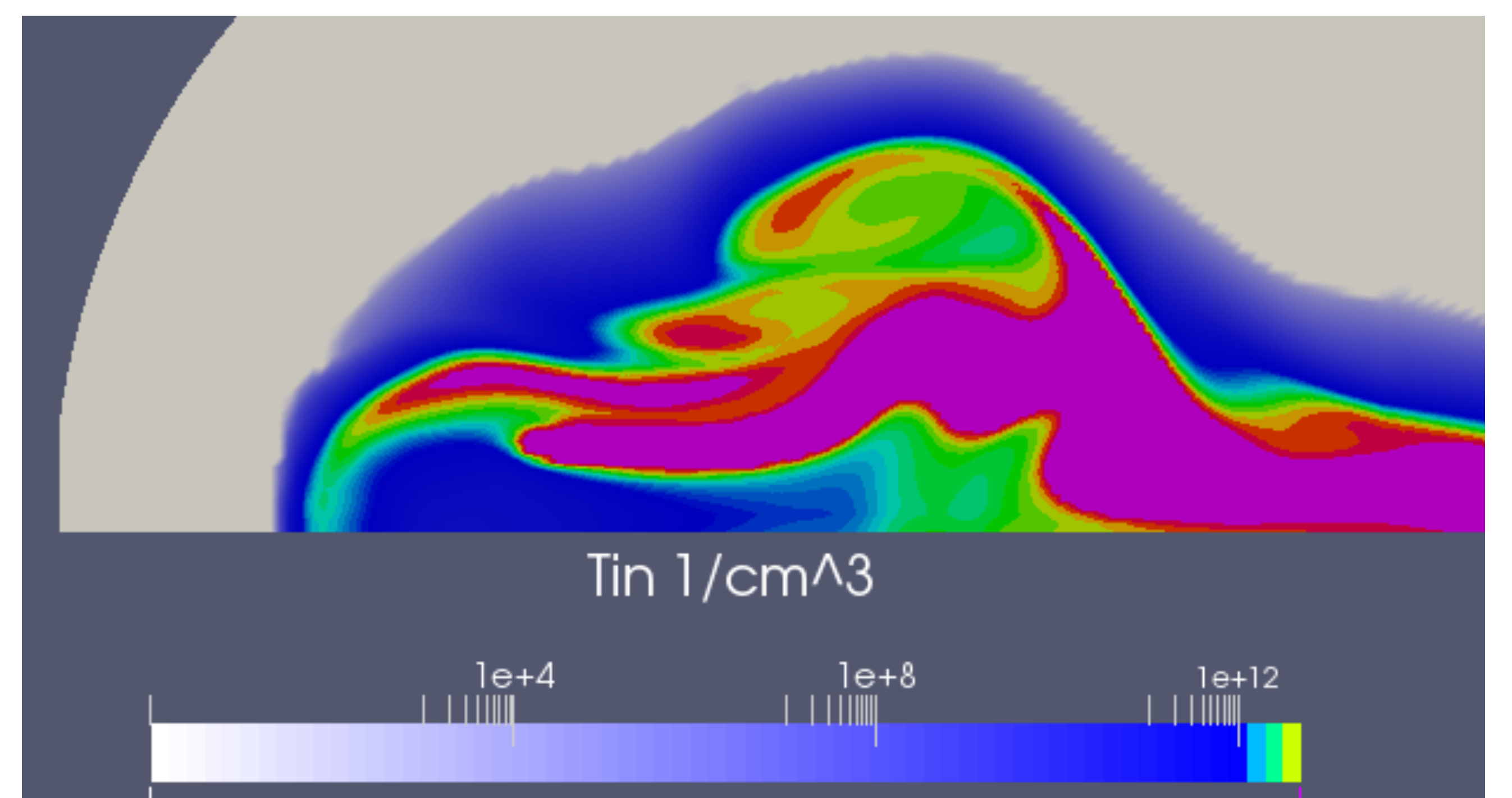


Influence of different processes on Sn deposition

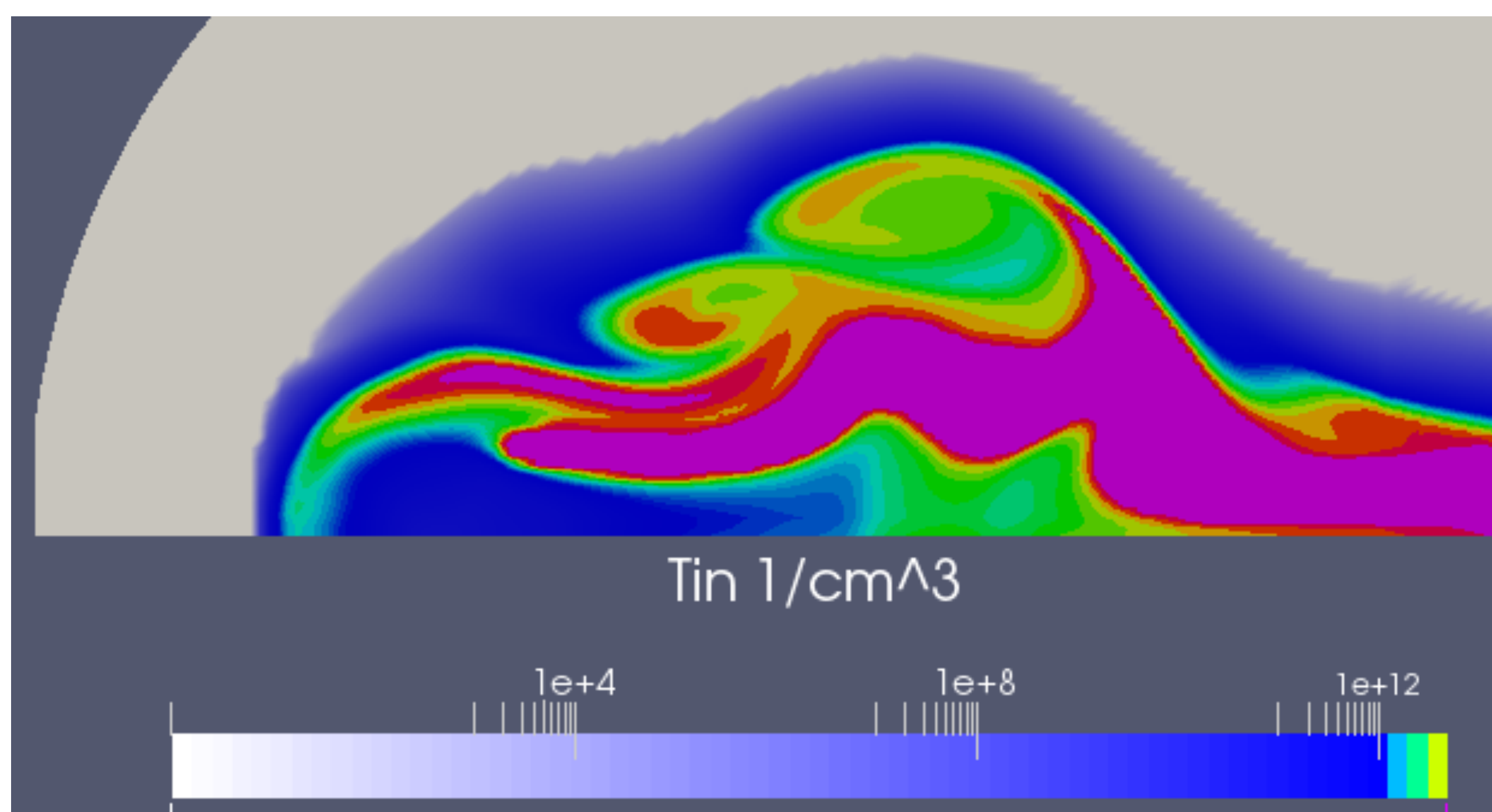
1. Isotropic angular distribution of fast ions (gas heating due to fast ions only)



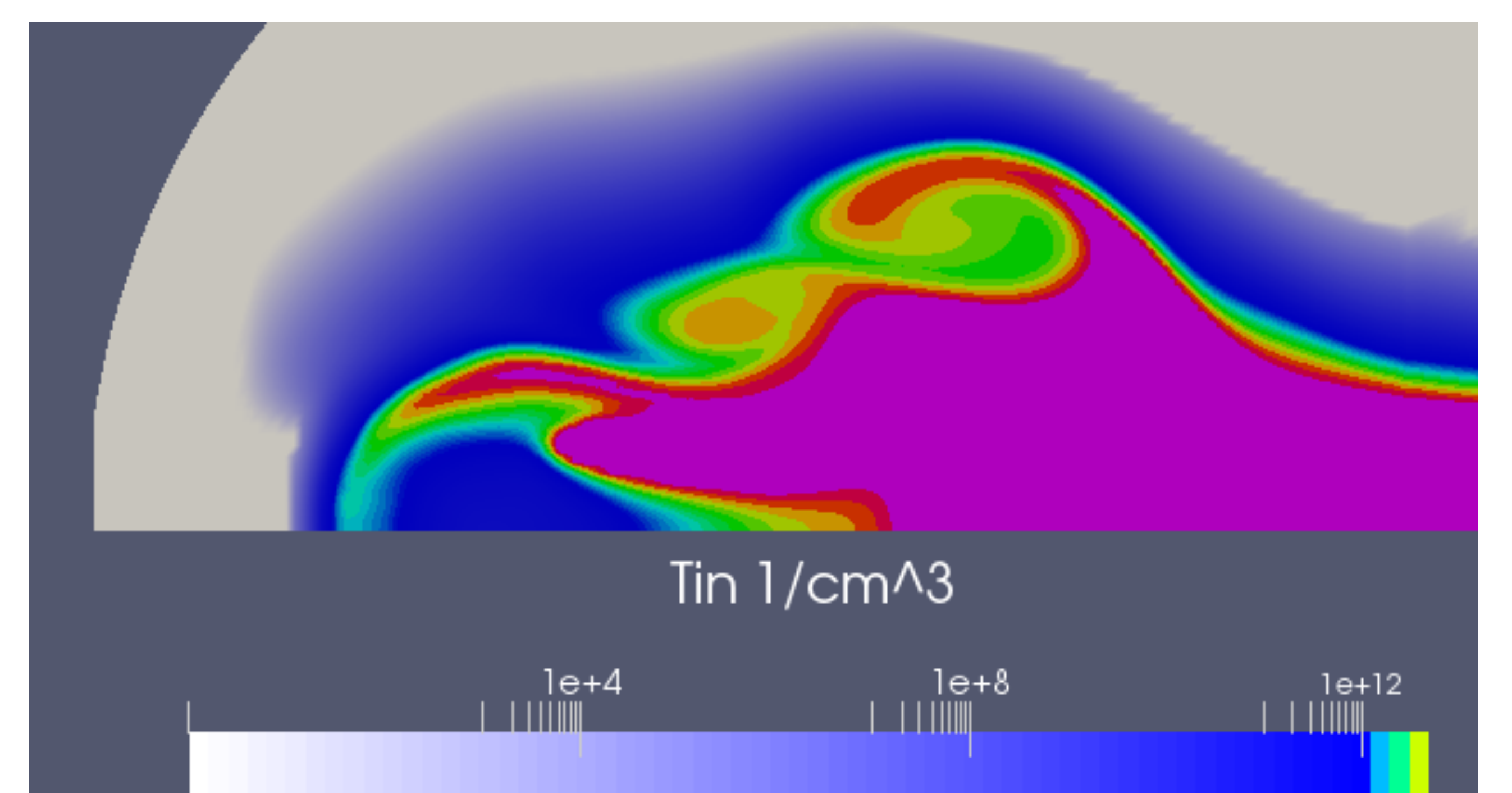
2. Anisotropic source of fast ions from RZLINE



3. Added: plasma heat conductivity, radiation energy losses, momentum transfer



4. Added: mass diffusion



Comments on physical aspects

1. Correct angular-energy distribution of the source is important for plasma bubble growth modeling (see Fig. 1-2).
2. Such processes as heat conduction, radiation losses and particle kinetics in a present case of relatively low temperatures are not significant (see Fig. 2-3).
3. Mass diffusion is a process that strongly affects tin spread in the chamber (see Fig. 3-4).

Conclusions

A package for modeling plasma expansion in the atmosphere of a buffer gas has been developed. It includes:

1. The RZLINE and THERMOS codes as a plasma and radiation source.
2. A Monte Carlo code for modeling transport of fast ions and relevant processes.
3. 2D single-velocity multi-component hydrodynamics code for mixture transport.

The preliminary results obtained with the present version of the package demonstrate realistic contamination and lifetime of the collector.